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On the Diagnosis of disease, and the importance of distinguishing a state of Excitement in the circulation, from one of Inflammation. By Walter Somerville of Virginia.

Read March 22d 1826

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On the Diagnosis of disease, and the importance of distinguishing a state of Excitement in the circulation, from one of Inflammation.

In reviewing the multifarious, extensive, and interesting subjects, relative to the science of Medicine, we cannot fail to be convinced, of the great importance of them all, and of the imperious attention, which they demand of us. Indeed so intimately connected to each other, are the different branches of our science, that a perfect knowledge of the one, is unattainable, without some previous acquaintance with the others. Like the constellations of the celestial world, they mutually tend to enlighten and support each other, by the reflection which they equally diffuse.

Among the many subjects embraced within the circle of our science, there is not one in the whole catalogue, which more strongly demands our attention, or upon which, our success in the treatment of disease more depends, than that of Diagnosis, or the symptoms by

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which we distinguish disease. It is here, that an acquaint-ance with, the different branches of our profession is called into requisition, here the whole of our knowledge must be concentrated, our judgment and discrimination exerted; and it is here, more than in the exercise of any other part of our profession, that we are caused to lament the imperfection of our art. In proportion therefore to the difficulty and importance of the subject, should be our exertion to render it familiar. It is our object in the present inquiry, to review the different means to which we resort for distinguishing disease.

For the attainment of this end, an acquaintance with the symptoms of particular diseases, will intuitively strike us, as being one of the primary and most essential requisites; and to become acquainted with the symptoms of disease it will be necessary in the first place, to study them as they have been detailed by the most respectable writers.

Among the many celebrated authors, distinguished

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for the accuracy by which they have detailed the symp-
-toms of disease, and pointed out their pathognomic
characteristics, the illustrious and immortal Cullen
undoubtedly deserves the superiority. To a mind by
nature rigorous and comprehensive, were united
sound judgment and discrimination, together
with remarkable powers of observation and reflec-
-tion. Talents such as these, are seldom to be met
with, and very rarely concentrated in the same
individual. Guided by the symptoms which he
has laid down, and assisted by our own observa-
-tions, we will generally succeed in this important
end; but cases sometimes occur which baffle the most
experienced and judicious.

Next to an acquaintance with the symptoms of dis-
-eases, an accurate knowledge of Anatomy is of
the greatest importance, in forming an accurate
diagnosis. By its assistance, we are enabled to detect
and comprehend the anomalous forms of diseases

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action which so frequently present themselves. By it, we can comprehend, why different organs, and parts of the animal machine; in some cases are through the medium of sympathy more affected than those in which the disease is primarily seated. By its assistance we can readily conceive in what manner, enlargements of the pancreas, produce a constipation of the bowels, vomiting, and great uneasiness, immediately after taking food &c, in consequence of its pressure on the duodenum. Deprived of its aid, we should be unable to account for those cerebral affections many of which have their origin in the stomach, but through the influence of the nerves, extend their power to the brain. Indeed without an acquaintance with the structure and formation of the human system, the science of Medicine would be not only a useless but a dangerous art, involved in obscurity and empyricism.

Among the methods to which we resort for distin-

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-guishing disease, the state of the pulse, is not the least valuable. The intimate connection existing between the bloodvessels and the rest of the system, immediately convinces us, that the one cannot be disordered without a corresponding affection of the other. In addition to these means we may add, an examination of the different excretions of the body, as the faces which are altered either in color or consistence in a variety of diseases, the matter expectorated in pulmonary affections, the urine in dropsy, and various other diseases of the chest.
These are the most important means to which we resort for distinguishing disease, but a variety of mechanical means were introduced by the ancients, some of these have been constantly in use while others have been recently revived by modern practitioners; such as the Hippocratic succussion, which consists in violently shaking the patient. This was an ancient method practised by Hippocrates and since revived by Mr Laennec; Percussion of the chest is a method

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which was recommended by Avenbrugger. It consists in striking the chest with the ends of the fingers united; in which case says Corvisart if the lungs are sound, full of air, and if no foreign body, either solid or fluid, occupy the interior of the thoracic cavity, the sound produced by the percussion has been compared to that proceeding from an empty barrel when struck. Where on the contrary a solid or fluid body fills one of the cavities of the thorax, or both, the parieties give to the extent so occupied, a sound which has been characterized by the term (mat) dull, and which is said to resemble that excited by striking the thigh in the same manner, or with the flat of the hand. To these mechanical methods may be added, the mensuration of the chest, Pectoral Audition or Auscultation. The Stethoscope, an instrument recently invented by M. Laennec of Paris, appears to be valuable in forming a diagnosis of Pectoral diseases, and particularly of Pulmonary consumption.

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Examinations with the hand should not be neglected, particularly in diseases of the abdominal viscera, they form one of our most valuable resources in ascertaining affections of the liver, and uterus.
When we have ascertained the nature of a disease, we have effected a most desirable object, and the method of treatment is then for the most part very clearly indicated, but until this is accomplished it would be best to desist from any rigorous method of treatment. For the attainment therefore of this important end, let us bring into cooperation all the resources of our art; let us recall to mind the result of former observation, and experience, and if these will not avail, let us then have recourse to the judgment of others
As nearly allied to the subject before us, we have thought it proper to introduce, the importance of distinguishing a state of Excitement in the circulation, from one of Inflammation. That we often meet with cases which

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at first appear to be attended with every symptom of acute inflammation, but upon farther analysis prove to be those of excitement only, is an occurrence which every candid practitioner will admit. This distinction between a state of excitement in the circulation, and one of inflammation, has hitherto claimed little attention, and while many practitioners have been well acquainted with those two conditions of the circulation and acted upon a conviction of their existence, yet we believe that no particular attention has been bestowed on this subject by any other writer than Armstrong, who briefly takes notice of it.

While every one at all acquainted with the principles of our science, will readily admit the importance of this distinction yet we must at the same time admit, that it requires the greatest judgment, and discrimination to form a distinction with precision. A forcible illustration of this difficulty, may be found in an anecdote related in the Medical Recorder. The late Doct. Wistar, while prosecuting his professional studies in the University

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of Edinburgh, was concerned in some experiments on transfusion, a subject which at that day considerably occupied the minds of medical characters in many parts of Europe. At a time when one of those experiments was instituting, a gentleman of eminence then a lecturer in Edinburgh probably Doctr Aiken, unexpectedly came in to observe what was going on. The dog had just been nearly emptied of his blood, Wistar and the rest of his fellow students present, agreed to conceal this circumstance from their visitor, and to enquire of him for their own diversion what was the state of the animals circulation. The question being put, the Doctr stepped up, drew his glove, and with an air of solemnity placed his hands on the thorax, and after a short examination of the actions of the heart declared the dog to be in a high sthenic state. Vide Review of Parry on the pulse.

Notwithstanding this acknowledged difficulty we think that by careful attention and a perfect acquaintance

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with those two conditions of the system, that a distinction may be formed. In inflammation, the pulse is quick, frequent, full, and hard, and there is pain in a particular part. In excitement likewise we find the pulse very nearly in the same state, but there is an absence of pain in a particular part." Hence the chief difference seems not to consist in the state of the general circulation, but in that of particular parts. The action of the heart and arteries is alike augmented in each, but there is in inflammation a greater local accumulation of blood, than in simple excitement." In inflammation we will generally find congestions of blood existing in the capillary vessels, while we believe that in excitement the action of those vessels is increased. From the experiments of Wilson Philip on the fin of the lamprey, the ear, mesentery &c of the rabbit it appears to be clearly established, that the state of the vessels in an inflamed part is that of preternatural distention, and debility, while that of the larger vessels is

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entirely the reverse. "Unassisted by glasses we readily perceive, that they do not suffer a similar distention, and the increased pulsation of the arteries sufficiently evince their increased action. It was evident from those experiments, that inflammation although it commences in the capillary vessels, if it continues, the circulation in the smaller vessels being obstructed by their debility those immediately preceding them will soon begin to be distended and consequently debilitated, so that in inflammations which have lasted long, the vessels preceding the capillaries in the course of the circulation as well as the capillaries themselves, are distended." When the larger arteries are debilitated and consequently distended in the first instance; the disease which may be termed turgescence, or partial plethora, is of a nature very different from inflammation. "In this case there is little or no accumulation of blood in the capillaries as appears from their being pale or only slightly turgid,

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"there is a tergo from the debilitated state of the larger vessels being too weak to occasion preternatural distention in them. In the one case the action of the capillaries is weak compared with that of the larger vessels, in the other the action of the larger vessels compared with that of the capillaries."

We think it probable that the pain in inflammation arises principally from congestion in the capillary vessels, thereby producing compression on the nerves of the part. This doctrine is somewhat confirmed by the fact that the remedies most effectual for relieving the pain in inflammation are such as will be found to act either directly, or indirectly, on the capillary vessels. Bloodletting undoubtedly operates in this manner. For "inflammation seems to consist in the debility of the capillaries followed by an increased action of the larger vessels, and is terminated as soon as the capillaries are so far excited, and the larger arteries so far weakened, by the preternatural

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action of the latter, that the power of the capillaries, is in due proportion, to the vis a tergo". and by abstracting blood from the general circulation, an equal action is restored between the arteries and the capillary vessels, the vis a tergo is diminished, and the capillaries of the inflamed part have an opportunity of unloading themselves. But we do not wish to refer the operation of venesection altogether to this mechanical process. It has we may say, a peculiar specific action on the whole system, of a far superior and more important character than that which we have just considered. This operation is of so peculiar a nature as to be in some degree inexplicable, while many of its effects are perfectly evident, such as, removing the phlogistic diathesis of the system, abating the action of the heart and arteries, and occasioning the process of revulsion. But that vis insita, by which is subdued the morbid association of diseased action, is of a

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far superior nature, to what we should a priori concieve. It is this which renders Venesection so sovreign a remedy in the therapeutic science; and which constitutes it, the "Magnum donum Dei"?

To return from this digression to the confirmation of our position, that the remedies most effectual in relieving local pain are such as act on the capillary vessels; the next remedy which we shall mention is blisters. These it is evident have the effect of mitigating pain by exciting the capillary vessels to action through the medium of the irritation which they induce. Having mentioned the most efficient remedies for the alleviation of local pain and endeavored to explain in what manner they produce their effects, we shall overlook those of an inferior though highly important character such as purgatives, diaphoretics, cold applications, &c. which although they operate on the system at large, yet extend their influence also to that system of

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repels, to which we have frequently alluded. Another diagnostic by which we may judge of the presence or absence of inflammation is, the appearances of the blood drawn. These appearances however, are so familiar to us all, that it will be unnecessary to describe them minutely, particularly as they have been so accurately detailed, by almost every writer on inflammation. The existence of the buffy coat although not an infallible indication of inflammation, yet it is an evidence upon which we can safely rely. There is one state of the pulse usually present in inflammation, which will serve as an important distinction between inflammation and excitement. It is the hard and chorded state of the pulse, which though generally attendant upon inflammation seldom or never exists in excitement.

By a review of the different symptoms of inflammation we shall find, that, next to the pulse, the existence

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of local pain constitutes one of the most certain di-
-agnostics between inflammation and excitement.
We have now we believe mentioned the most impor-
-tant means by which we can distinguish those
different states of the circulation; and we think
that by calling to our aid all those different
resources, viz the state of the pulse, the existence
or absence of local pain, the appearances of the
blood drawn, &c. that this important distinction
may be formed. But in this case as well as
in forming a distinction between diseases
generally, let us ever bear in mind, the import-
-ance of ascertaining, with some degree of certain
-ty the nature of the case before us, let us ever
remember, that it would be better to entrust the case
to the Vis Medicatrix Naturæ, than resort to vig
-orous and doubtful measures; and let this maxim
be ever present with us "Anceps remedium peior
nulla"

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